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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/638,984	08/12/2003	Manoj Aggarwal	SAR 14823	6309

58882 7590 06/04/2007

PATENT DOCKET ADMINISTRATOR
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EXAMINER	
SENFI, BEHROOZ M	
ART UNIT	PAPER NUMBER
2621	
MAIL DATE	DELIVERY MODE
06/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/638,984	AGGARWAL ET AL.	
	Examiner	Art Unit	
	Behrooz Senfi	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/24/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. Oath/Declaration submitted by applicant on 08/12/2003 is accepted.

Drawings

2. The drawings submitted by applicant on 01/16/2004 are accepted.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3 – 7, 12 – 13, 18 and 22 - 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Broemmelsiek (US 2002/0030741).

Regarding claim 1; Broemmelsiek '741 discloses, a method for performing Surveillance (i.e. fig. 1, page 1, paragraph 0002 and page 2, paragraphs 0023 and 0025) comprising: monitoring an indicia of manual imaging sensor control (i.e. page 2, paragraph 0022, lines 6 – 8 and page 3, paragraph 0028, where discloses user input device by which user can control the camera manually, e.g. the indicia indicates that manual control is being used), and switching to automatic imaging sensor control when the indicia indicates that manual imaging sensor control is not being used (i.e. page, 2, paragraphs 0022 and 0025, discloses the camera processing system can be performed

automatically or manually, which implies that, when the camera is in automatic control mode, the manual imaging control would be disabled, e.g. the indicia indicates that manual control is not being used at this time) and switching to manual imaging sensor control when the indicia indicates that manual imaging sensor control is being used (please see; page, 2, paragraphs 0022 and 0025, where discloses the camera processing system can be performed automatically or manually, which implies that, when the camera is manually controlled through a user input device "page 3, paragraph 0028", e.g. indicia indicates that manual imaging sensor control is being used and the automatic control of the camera would be disabled at this time and the camera is being controlled based on the user input commands), and determining imaging sensor coordinates for at least one imaging sensor (i.e. page 2, left column, lines 5 – 8 and page 3, paragraph 0035, lines 1 – 4, where discloses coordinate position of the movable video camera) and mapping the imaging sensor coordinates to image pixel coordinates (i.e. page 3, paragraphs 0034 and 0037, where mapping of camera coordinates (position) corresponds to image pixel coordinates) and processing the image pixel coordinates to determine information regarding object within a scene that is captured by at least one imaging sensor (i.e. page 2, paragraph 0025 and page 3, paragraphs 0034 - 0037, where discloses processing of the image and mapping coordinates which corresponds to image pixel coordinates to determine information regarding object; e.g. motion of objects within the field of view and based on the motion of the object, controls the camera to hold the object of interest in a field of view of the camera).

Regarding claim 3, Broemmelsiek '741 discloses, wherein the orientation of the imaging sensor comprises pan, tilt and zoom (please see; page 4, paragraph 0039, PTZ coordinates).

Regarding claim 4, Broemmelsiek '741 discloses, detecting object motion within the scene (i.e. page 2, paragraph, 0025, where discloses process of automatic moving object detection, by thresholding techniques to detect motion of the moving object).

Regarding claim 5, Broemmelsiek '741 discloses, upon detecting object motion during automatic imaging sensor control (i.e. page, 2, paragraphs 0025, where discloses automatic detection of moving object) switch to manual imaging sensor control (please see; page, 2, paragraphs 0025 and page 3, paragraph 0028, where discloses automatically detecting moving objects, and after automatic detection of moving object the user input commands can be accepted by the system and used to control the camera manually, e.g. upon automatic detection of moving object, user input commands can be accepted to manually control the imaging sensor).

Regarding claim 6, Broemmelsiek '741 discloses, a method for performing Surveillance (i.e. fig. 1, pages 1 - 2; paragraphs 0002, 0023 and 0025) comprising: pointing an imaging sensor at a location in a scene (see; fig. 1, field of view of the camera 12 and camera controller 14, page 2, paragraph 0023 and page 4, paragraph 0039), and detecting a moving object within the scene (i.e. page 2, paragraph 0025, where discloses detection of moving object), and controlling pan, tilt and zoom functions of the imaging sensor to automatically track the moving object (please see; page 2, paragraph 0022 and page 4, paragraph 0039, where discloses detection of object

automatically and further states that, automatically or manually direct the camera's line-of-sight (e.g. PTZ) to track the object, which implies that the system is capable of controlling the camera (PTZ) to track the object in automatic mode).

Regarding claim 7, Broemmelsiek '741 discloses, manually directing the imaging sensor to image the location (see; fig. 1, field of view of the camera 12 and camera controller 14, page 3, paragraph 0028, where discloses manually controlling the camera by user input).

Regarding claim 12, Broemmelsiek '741 discloses, wherein the location is a region of the scene that is imaged by the imaging sensor (i.e. fig. 1, field of view of camera12) and further comprising establishing a sensitivity level for processing information within the region (please see; page 2, paragraph 0025, where discloses applying thresholding techniques (e.g. sensitivity level) for processing the information to detect the motion of the object within the scene/field of view of the imaging sensor/camera).

Regarding claim 13, Broemmelsiek '741 discloses, wherein the sensitivity level establishes a motion detection sensitivity level (i.e. page 2, paragraph 0025, where discloses applying thresholding techniques (e.g. sensitivity level) to establishes a motion detection, motion of the object within the field of view of the imaging sensor/camera).

Regarding claim 18, Broemmelsiek '741 discloses, an imaging sensor control module for pointing an imaging sensor at a location in a scene (see; fig. 2, input device 20 and controller 14, page 3, paragraph 0028, lines 1 – 3), and an image processor for

detecting a moving object within the scene (i.e. figs. 1 - 2, camera processing 22, page 2, paragraph 0025, where discloses processing of the image captured by the camera to detect moving object within the scene/field of view of the camera) and a controller for controlling pan, tilt and zoom functions of the imaging sensor to automatically track the moving object (please see; page 2, paragraph 0022, where discloses automatically select a moving object and direct the camera's line-of-sight (e.g. PTZ) to track the moving object).

Regarding claim 22, Broemmelsiek '741 discloses, wherein the location is a region of the scene that is imaged by the imaging sensor (i.e. fig. 1, field of view of camera12, which consider as region of the scene that is imaged by camera 12) and further comprising establishing a sensitivity level for processing information within the region (please see; page 2, paragraph 0025, where discloses applying thresholding techniques (e.g. sensitivity level) for processing the information to detect the motion of the object within the scene/field of view of the imaging sensor/camera).

Regarding claim 23, Broemmelsiek '741 discloses, wherein the sensitivity level establishes a motion detection sensitivity level (i.e. page 2, paragraph 0025, where discloses applying thresholding techniques (e.g. sensitivity level) to establishes a motion detection, motion of the object within the field of view of the imaging sensor/camera).

5. Claims 6 – 11, 14 – 21 and 24 - 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Sengupta et al. (US 6,359,647).

Regarding claim 6, Sengupta '647 discloses, a method for performing

Surveillance (i.e. fig. 1, col. 3, lines 9 – 37 and cols. 4 – 5, lines 46 – 18) comprising: pointing an imaging sensor at a location in a scene (please see; fig. 1, field of view of the adjustable cameras 101 and 102 and controller 130, col. 3, lines 9 - 22), and detecting a moving object within the scene (see; fig. 1, location determinator 140 and figure tracking 144, col. 3, lines 54 – 55, where detects the moving object and determines the location of the moving object within the camera's field of view), and controlling pan, tilt and zoom functions of the imaging sensor to automatically track the moving object (i.e. fig. 1, adjustable cameras 101 and 102 and controller 130, col. 3, lines 25 – 28, where discloses controlling pan, tilt and zoom functions of the selected imaging sensor, and col. 2, lines 47 – 50 and col. 3, lines 66 - 67, to automatically track the moving object).

Regarding claim 7, Sengupta '647 discloses, manually directing the imaging sensor to image the location (please see; col. 3, lines 23 – 28 and col. 4, lines 20 – 25, operator manually controlling imaging sensor via operator station 170 and controller 130).

Regarding claim 8, Sengupta '647 discloses, wherein the pointing step further comprises automatically scanning the imaging sensor across the scene to image the location; and continue scanning the scene until the moving object is detected (i.e. col. 4, lines 8 – 13 and col. 13, lines 38 – 65, where indicates that the automated means can be applied (e.g. imaging sensor) to image the scene and continually monitor (e.g. scan) the scene to detect the moving object and reports the moving object location).

Regarding claim 9, Sengupta '647 discloses, deriving a latitude, longitude and altitude of the moving object based upon the pan, tilt and zoom parameters of the imaging (please see; col. 5, lines 19 – 67, which determines location of the object in three dimensional coordinates; with respect to the cameras pan, tilt and zoom; it is noted that, tilt angle of the camera referred to as the latitude of the object/target, and pan position consider as longitude, and the third dimension is the altitude or height of the object in three dimensional coordinates, which defines a set of object coordinates for object(s) in the field of view of the camera).

Regarding claim 10, Sengupta '647 discloses, predicting a sight line between the imaging sensor, and the moving object, and using the sight line to optimally image the moving object (i.e. col. 2, lines 27 – 36, col. 4, lines 27 – 45, col. 6, lines 15 – 39, where discloses predicting location of the moving object based on camera's line of sight and the moving object).

Regarding claim 11, Sengupta '647 discloses, a plurality of imaging sensors and using the sight line to select an imaging sensor from the plurality of imaging sensor that provides an optimal view of the moving object (see; col. 4, lines 27 – 45 and col. 7, lines 57 – col. 8, lines 31, where indicates using the line of sight of camera and actual field of view to adjust/control and select the camera to maintain the target figure in the center of image from camera (e.g. optimal view of the object)).

Regarding claim 14, Sengupta '647 discloses, wherein the information produced by the imaging sensor is displayed in combination with a zone map that depicts the scene (please see; figs. 3a – 3c and 5C, where shows information produced by the

imaging sensor "fig. 5c, target P and cameras field of view 581 and 582, and line of sight 580" in combination with the zone map).

Regarding claim 15, Sengupta '647 discloses, wherein coordinates of locations in the zone map are mapped to pan/tilt/zoom parameters using a look-up table (please see; col. 3, lines 38 – 53 and col. 4, lines 46 – col. 5, lines 18; that is in order to effect this automatic selection of cameras, the camera handoff system uses the information contained in the data base 160 (which consider as look-up table) to control/adjust the camera(s), pan tilt and zoom).

Regarding claim 16, Sengupta '647 discloses, further comprising combining information from a plurality of imaging sensors with the zone map (please see; figs. 3a – 3c, where shows zone map in combination with the imaging sensors locations, col. 4, line 46 – col. 5, lines 18).

Regarding claim 17, Sengupta '647 discloses, wherein a plurality of imaging sensors image the scene (i.e. fig. 1, cameras 101 – 103 and controller 130) and the altitude, longitude and altitude of the moving object are used to handoff imaging of one imaging sensor to another imaging sensor (please see; col. 3, lines 38 - 65 and col. 4, lines 35 – 45, where discloses, switching from one camera to another based on the camera field of view and object location by using 3D coordinate, it is noted that "determining location of the object in three dimensional coordinates as discussed earlier in claim 9 above, by using latitude, longitude and altitude of the moving object based upon the pan, tilt and zoom parameters of the imaging sensor; tilt angle of the camera referred to as the latitude of the object/target, and pan position of the camera consider

as longitude, and the third dimension is the altitude or height of the object in three dimensional coordinates, which defines a set of object coordinates for object(s) in the field of view of the camera, to determine the object location in 3D coordinates").

Regarding claim 18, Sengupta '647 discloses, an imaging sensor control module for pointing an imaging sensor at a location in a scene (please see; fig. 1, field of view of the adjustable cameras 101 and 102 and controller 130, col. 3, lines 9 - 22) and an image processor for detecting a moving object within the scene (see; figs. 1, elements 140 – 142 and user station 170, for processing the image captured by the cameras to detect the moving target/object within the field of view of the camera, col. 1, lines 42 – 45, and col. 5, lines 54 – 61) and a controller for controlling pan, tilt and zoom functions of the imaging sensor (see; fig. 1, adjustable cameras 101 and 102, controller 130 and col. 3, lines 25 – 28) to automatically track the moving object (i.e. fig. 1, figure tracking system, col. 2, lines 47 – 50 and col. 3, lines 66 – 67, where discloses figure tracking system automatically track the figure/object).

Regarding claim 19, Sengupta '647 discloses, wherein the image processor derives a latitude, longitude and altitude of the moving object based upon pan, tilt and zoom parameters of the imaging sensor (please see; col. 5, lines 19 – 67, which determines location of the object in three dimensional coordinates; with respect to the cameras pan, tilt and zoom; it is noted that, tilt angle of the camera referred to as the latitude of the object/target, and pan position consider as longitude and the third dimension is the altitude or height of the object in three dimensional coordinates, which defines a set of object coordinates for object(s) in the field of view of the camera).

Regarding claim 20, Sengupta '647 discloses, wherein the image processor predicts a sight line between the imaging sensor and the moving object and uses the sight line to enable the imaging sensor control module to point the imagines sensor to optimally image the moving object (see; col. 2, lines 27 – 36, col. 4, lines 27 – 45 and col. 6, lines 15 – 39, where indicates using the line of sight of camera and actual field of view to adjust/control the camera to maintain the target figure in the center of image from camera (e.g. optimal image the moving object)).

Regarding claim 21, Sengupta '647 discloses, a plurality of imaging sensors and using the sight line to select an imaging sensor from the plurality of imaging sensor that provides an optimal view of the moving object (please see; col. 4, lines 27 – 45 and col. 7, lines 57 – col. 8, lines 31, where indicates using the line of sight of camera and actual field of view to adjust/control and select the camera to maintain the target figure in the center of image from camera (e.g. optimal view of the object)).

Regarding claim 24, Sengupta '647 discloses, wherein the information produced by the imaging sensor is displayed in combination with a zone map that depicts the scene (i.e. fig. 5c, where shows information produced by the imaging sensor "target P and cameras field of view 581 and 582, and line of sight 580" in combination with the zone map).

Regarding claim 25, Sengupta '647 discloses, wherein the information produced by the imaging sensor is displayed in combination with a zone map that depicts the scene (please see; figs. 3a – 3c and 5C, where shows information produced by the

imaging sensor "fig. 5c, target P and cameras field of view 581 and 582, and line of sight 580" in combination with the zone map).

Regarding claim 26, Sengupta '647 discloses, further comprising combining information from a plurality of imaging sensors with the zone map (i.e. figs. 3a – 3c and 5C, where shows zone map in combination with the imaging sensors information, col. 4, line 46 – col. 5, lines 18).

Regarding claim 27, Sengupta '647 discloses, wherein a plurality of imaging sensors image the scene (i.e. fig. 1, cameras 101 – 103 and controller 130) and the altitude, longitude and altitude of the moving object are used to handoff imaging of one imaging sensor to another imaging sensor (please see; col. 3, lines 38 - 65 and col. 4, lines 35 – 45, where discloses, switching from one camera to another based on the camera field of view and object location by using 3D coordinate, it is noted that "determining location of the object in three dimensional coordinates as discussed earlier in claim 9 above, by using latitude, longitude and altitude of the moving object based upon the pan, tilt and zoom parameters of the imaging sensor; tilt angle of the camera referred to as the latitude of the object/target, and pan position of the camera consider as longitude, and the third dimension is the altitude or height of the object in three dimensional coordinates, which defines a set of object coordinates for object(s) in the field of view of the camera, to determine the object location in 3D coordinates").

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Broemmelsiek (US 2002/0030741) in view of Cohen-Solal et al. (US 7,173,650).

Regarding claim 2, Broemmelsiek '741 teaches, user input device, which can be used for control of the camera (i.e. page 3, paragraph 0028, lines 1 – 3).

Broemmelsiek '741 is silent in regards to "manipulating a joystick" to control an Orientation of an imaging sensor and the indicia comprises movement of the joystick.

Cohen '650 in the same field of automated video tracking system (I.e. col. 4, lines 30 – 33 and col. 6, lines 1 - 9) teaches, "manipulating a joystick" to control camera orientation (pan, tilt and zoom) by moving the joystick.

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide a joystick as taught by Cohen '650 (i.e. col. 4, lines 30 – 33 and col. 6, lines 1 - 9) as an input device (i.e. fig. 2, element 20) in Broemmelsiek's object tracking system, to manually control camera orientation (pan, tilt and zoom) for tracking the object, as suggested by Cohen '650 (i.e. col. 6, lines 2 – 7).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Pretzer et al. (US 2003/0103139 A1), System and Method for tracking objects and

obscuring fields of view under video surveillance.

Cavallaro et al. (US 6,133,946), System for determining the Position of an Object.

Gero (US 2004/0046938 A1), Automatic and manual lens focusing system with visual matching for motion picture camera.

Contact

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(571) 272-7339.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mehrdad Dastouri** can be reached on **(571) 272-7418.**

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, Va. 22314.

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(571) 272-6000,**

Or faxed to:

(571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B.M.S.